General

1.) When the following recommendations are followed, plugs can be installed without a sealant and still retain maximum sealing qualities.
2.) A sealant should not be required if the holes are properly prepared.
3.) A small amount of lubricant, such as light machine oil is all that is required to prevent galling during insertion.

Preparation of Holes

1.) Finish inside hole should not exceed 100 micro-inches. Care should be taken to prevent boring or reaming tool leaving tool marks while being retracted from hole.
2.) Excentricity of hole should not exceed .002" for sizes under 1" diameter, not more than .003" for sizes over 1" diameter.
3.) Under normal conditions, hole diameters should not exceed the recommendations shown on the specification sheets.
4.) Core hole entry should have a radius of 1/4" minimum tangent to hole. A 30 degree chamfer is often used, but is not recommended as this merely relocates the sharp corner of the bored hole.
5.) Hole entry diameter should be larger than the bored hole by .015" minimum.

Driving the Plug

1.) Plugs should be driven from the inside bottom and NOT from the outer edge, or rim, of the cup.
2.) The driving arbor shoud be approximately .020-.025" smaller than the inside diameter of the plug.
3.) The driving end of the arbor should have a 1/16" radius to prevent deforming the inside radius of the plug. It should be flat to prevent making contact with the crown of the plug.
4.) Plugs should be driven square to the hole. The shoulder on the driver should be bottomed on the fininshed casting to control alignment and proper depth of insertion.
5.) Open end of plug shoud be driven approximately .030" past the tangent point of entry radius.
6.) Plugs should not touch bottom in a counterbored hole. This may cause deformation of the plugs, consequently leaking.

A reasonably good seal maybe obtained if small deviations, when special conditions require them, are made from these recommendations. We suggest, however, that they be followed as nearly as possible.

Illustration of Hole Preparation, Plug Driver, and Correct Plug Installation